

REMARKS

Claims 1-18 are pending in this application, with Claim 1 being independent.

Applicants have amended Claims 1, 2, 4-7, 9, 10, and 14-18.

Claims 1-18 stand rejected under one or the other or both of 35 U.S.C. §§ 112 and 103.

Applicants discuss each set of claim rejections in turn below.

Section 112 Rejections

Claims 2, 4-7 and 10-18 stand rejected to under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite for the reasons given at pages 2-3 of the Action.

Applicants traverse the reasoning advanced to support the Section 112 rejections.

Nevertheless, in an effort to advance prosecution on the merits but in no way conceding the propriety of the merits of the Section 112 rejections, Applicants have introduced amendments to the claims. The so-introduced amendments even more definitely set forth that which Applicants consider their invention.

Accordingly, reconsideration and withdrawal of the Section 112 rejections are respectfully requested.

Section 103 Rejections

Claims 1-18 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Patent No. 6,319,461 ("Domi") for the reasons given at pages 3-5 of the Action. Applicants traverse these Section 103 rejections.

For the Examiner's benefit, Applicants provide a brief review of the present invention, with reference to that which is claimed in the subject application. The present invention as defined by Claim 1 as now amended broadly speaking is directed to a soldering material comprising an alloy. The alloy is now defined to consist essentially of Sn (tin), 10 wt.% or less Ag (silver), 10 wt.% or less Bi (bismuth), 10 wt.% or less Sb (antimony), 3 wt.% or less Cu (copper), and 1.0 wt.% or less Ni (nickel).

One document -- Domi -- is cited against the pending claims. However, for at least the reasons set forth below, all claims are patentably distinct from Domi and should be in condition for allowance.

Domi is directed to and claims a lead-free solder alloy containing Sn and Ti and having a liquidus temperature not greater than 400°C, and further containing at least 0.001% by weight O. Domi relates to lead-free solder alloys for soldering oxide materials, such as ceramics and glass, at a low temperature.

Indeed, in the section entitled "OBJECT AND SUMMARY OF THE INVENTION", Domi reads:

The present invention is made to provide a solder alloy for bonding oxide materials such as glass and ceramics, wherein the solder alloy contains Ag, Cu, Zn, Al in addition to essential constituents, Sn and Ti, and further contains O wherein O content is defined.

(Col. 2, lines 1-5.)

Moreover, in the section entitled "EXAMPLES", each of Examples 1-20 show the required presence of Ti (titanium) and O (oxygen), in addition to Sn (tin). The Comparative Examples 1 and 2 do not show the presence of Ti.

Applicants have amended the claims pending herein to recite in Claim 1 that the alloy consists essentially of a series of elements in noted amounts. Ti is not listed among those elements; nor is O.

Domi does not disclose, teach or suggest a lead free solder alloy that does not contain Ti or for that matter O. Moreover, such a lead free solder alloy without Ti and/or O is not suggested by Domi. Ti and O are each required elements, according to Domi. Those elements are not required in Applicants' solder alloy. Nor are they suggested as possibilities for Applicants' solder alloy.

Given Domi, one or ordinary skill in the art would not have been motivation to reach Applicants' invention as now defined. Moreover, since Domi is directed to a lead free solder alloy "for bonding oxide materials such as glass and ceramics", one of ordinary skill in the art would not have had a reasonable expectation of success in reaching Applicants' invention as now defined. Applicants provide a solder alloy that is in "the near-eutectic range" while balancing the combination of "a decrease in melting temperature" and "improvement in creep resistance". Specification, page 4, paragraph [0010].

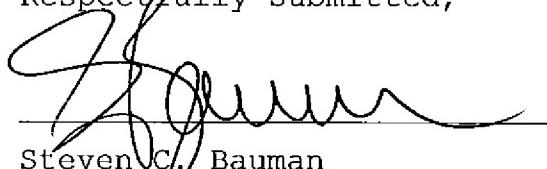
Based on the above, reconsideration and withdrawal of the Section 103 rejections are respectfully requested.

Prompt and favorable consideration of the subject application are respectfully requested.

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